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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/681,624 | 10/08/2003 | Oscar E. Agazzi | 13439US05 | 7400 |

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| EXAMINER | |
|---|---|
| CORRIELUS, JEAN B | |
| ART UNIT | PAPER NUMBER |
| 2611 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|---|---|---|
| 3 MONTHS | 02/09/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/681,624 | AGAZZI ET AL. | |
| | Examiner | Art Unit | |
| | Jean B. Corrielus | 2611 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *08 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *16-18 and 48-59* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-18 and 48-59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In *re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 48-59 and 16-17 are rejected under the judicially created doctrine of obviousness- type double patenting as being unpatentable over claims 46-56, 16 of U.S. Patent 6,477,200. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim(s) 46 of the patent contain(s) every element of claim(s) 48 of the instant application and as such anticipate(s) claim(s) 48 of the instant application. Claim 46 includes every limitations of claim 49,

Claim 47 includes every limitations of claim 50,

Claim 48 includes every limitations of claim 51,

Claim 49 includes every limitations of claim 52,

Claim 50 includes every limitations of claim 53,

Claim 51 includes every limitations of claim 54

Claim 52 includes every limitations of claim 55,

Claim 53 includes every limitations of claim 56,

Claim 54 includes every limitations of claim 57,

Claim 55 includes every limitations of claim 58,

Claim 56 includes every limitations of claim 59,

Claim 16 includes every limitations of claim 17,

Claim 80 includes every limitations of claim 16, therefore the same comment applies to claim 48 of the instant application applies equally to each of claims 50-59, 17 and 16.

"A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or **anticipated by**, the earlier claim. In re Longi, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of obviousness-type double patenting because the claims at issue were obvious over claims in four prior art patents); In re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus). " ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

***Specification***

3. The disclosure is objected to because of the following informalities: Please update the status of US applications referenced to in the specification.

Appropriate correction is required.

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Objections***

5. Claims 48-59 are objected to because of the following informalities: claim 48 recites a first ISI compensation circuit. However, there is no input provided to such a circuit. Claim 49, last line "a first ISI component" should be replaced by "said transmitter induced ISI component" so as to be consistent with antecedent in line 4. Claim 54, line 2, "multiple" should be inserted before "decision" for consistency. Claim 55, line 9, "set of" should be inserted after "the". The same comment applies to claim 56, after "of the" first occurrence and claim 57, after "the" first occurrence. Claim 59, line 5, "twodimentional should be replaced by "two-dimensional". Note that any claim whose base claim is objected is likewise objected. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 16, 18, 54, 57 and 58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16, "the DFSE" lacks of proper antecedent basis.

Claim 54, "the characteristics feedback gain factor" lacks of proper antecedent basis.

Claim 57, lines 5-6, "the set of one-dimensional decisions" lacks of proper antecedent basis. The same comment applies to claim 58, lines 4-5. Claim 18 is likewise rejected because of its dependency to claim 16.

8. Claims 16 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the claim does not set forth any relationship between the first ISI compensation circuit and previous components recited in the claim.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Soleimani et al US Patent No. 5,208,829.

Soleimani et al discloses an apparatus comprising an ISI compensation filters 31 and 32 having a substantially inverse impulse response to the impulse response of a pulse shaping filter of a remote transmitter see col. 2, lines 26-40 and further at col. 4, lines Soleimani further teaches that the filter can be implemented as a FIR Filter (FIR filter is known as an interference cancellation device) see col. 5, lines 3-5 and col. 4, lines 32-33 and a gain stage 41 note for instance fig. 9.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 48 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ojard US patent No. US 2005/0207510 A1 in view of Chevillat et al US patent no. 5,031,195.

As per claim 48, Ojard discloses device comprising: a first intersymbol interference (ISI) compensation circuit 1017 configured to compensate for a transmitter induced ISI component see paragraph 0062; a second ISI compensation circuit 1023, operatively coupled with the first ISI compensation circuit 1017 and configured to compensate for a transmission channel induced ISI component see paragraph 065. However Ojard does not teach the further limitation of a decoder system, operatively coupled with the second ISI compensation circuit, for computing the distance of a received symbolic word from a codeword. Chevillat et al discloses a decoder system,

operatively coupled with the second ISI compensation circuit, for computing the distance of a received symbolic word from a codeword see col. 1, lines 18-31. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in Ojard in order to provide the receiver with the enhanced capability to recover the original signal.

As per claim 52, Ojard further teaches the second ISI compensation circuit comprises: a slicer 1020 functionally equivalent to the claimed "Viterbi decoder" configured to decode a digital signal and generate tentative decisions; and feedback equalizer circuitry 1023 coupled to the slicer (Viterbi decoder) 1020, the feedback equalizer circuitry 1023 receiving the tentative decisions (output of 1020) and combining the tentative decisions with a set of high-ordered coefficients to generate a first value note that the DFE 1023 inherently includes coefficients considered as the claimed "high-ordered coefficients and that such coefficients are inherently combined in the DFE 1023 to provide an output to the summer 1019 as a first value.

13. Claims 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ojard US patent No. US 2005/0207510 A1 in view of Soleimani et al US Patent No. 5,208,829.

As per claim 49, Ojard discloses device comprising: a first intersymbol interference (ISI) compensation circuit 1017 configured to compensate for a transmitter induced ISI component see paragraph 0062; a second ISI compensation circuit 1023, operatively coupled with the first ISI compensation circuit 1017 and configured to compensate for a transmission channel induced ISI component see paragraph 065.

However Ojard does not teach the further of wherein the first ISI compensation circuit comprises: an inverse partial response filter having an impulse response substantially an inverse of an impulse response of a pulse shaping filter of a remote transmitter, so as to substantially compensate an input digital signal for a first ISI component. Soleimani et al discloses an apparatus comprising an ISI compensation filters 31 and 32 having a substantially inverse impulse response to the impulse response of a pulse shaping filter of a remote transmitter see col. 2, lines 26-40 and further at col. 4, lines Soleimani further teaches that the filter can be implemented as a FIR Filter (FIR filter is known as an interference cancellation device) see col. 5, lines 3-5 and col. 4, lines 32-33 and a gain stage 41 note for instance fig. 9. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in Ojard so as to efficiently remove the ISI component from the received signal so that signal detection can be improved.

As per claim 50, it would have been obvious to one skill in the art to implement the inverse partial response filter with a characteristic feedback gain K and the reason to do so would have been the same as provided with respect to claim 49 above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is 571-272-3020.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jean B Corrielus
Primary Examiner
Art Unit 2611
2/5/07